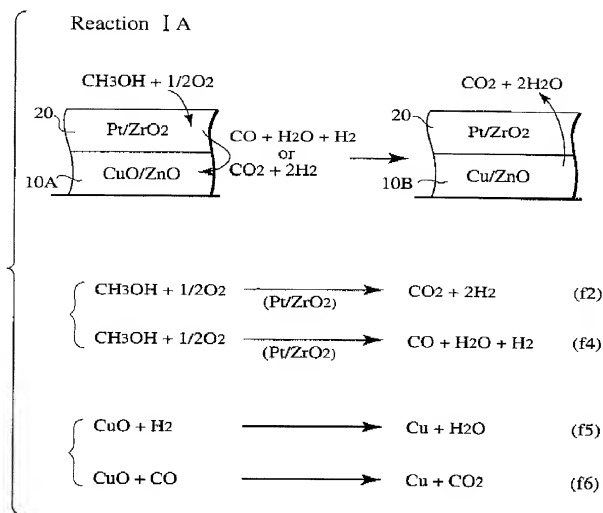


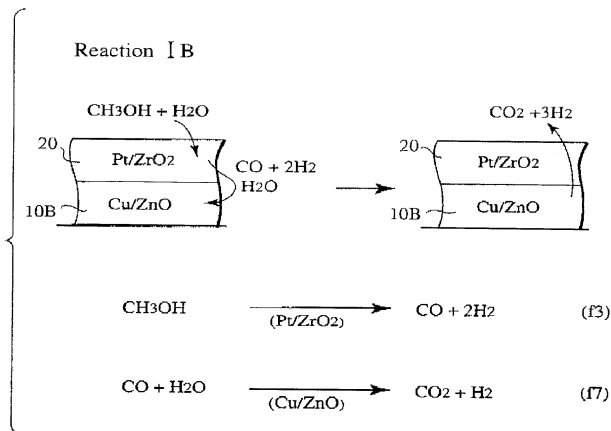
1/10

FIG. 1A



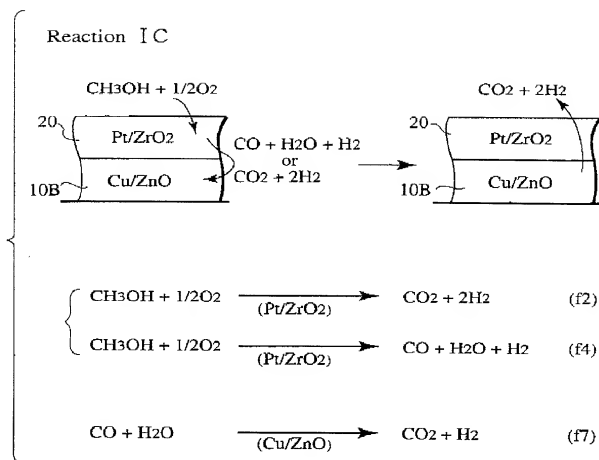
2/10

FIG.1B



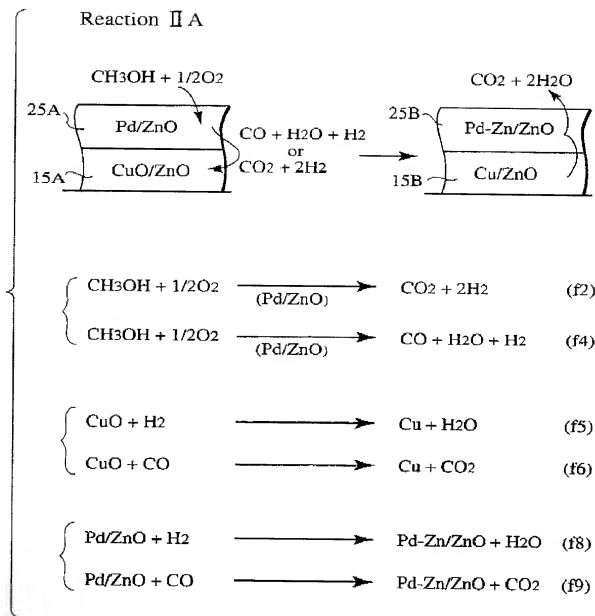
3/10

FIG.1C



4/10

FIG.2A



5/10

FIG.2B

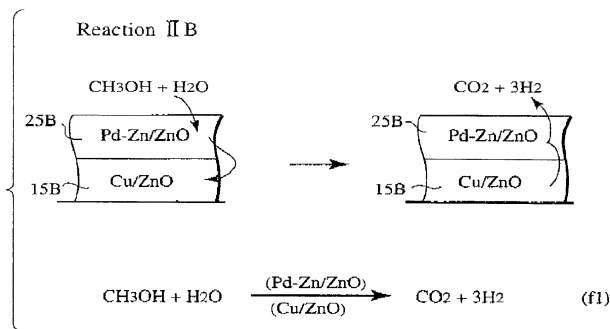
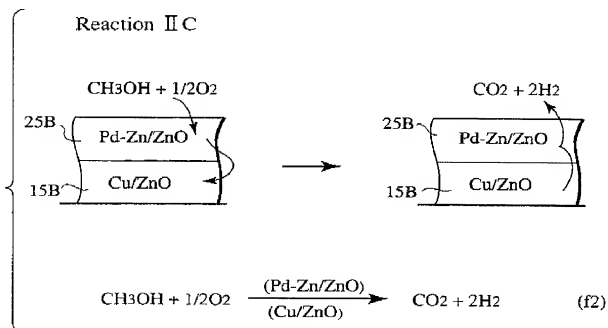


FIG.2C



6/10

FIG.3A

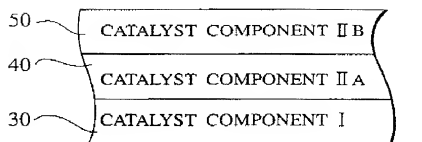
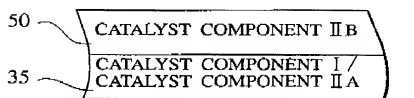


FIG.3B



7/10

FIG.4A

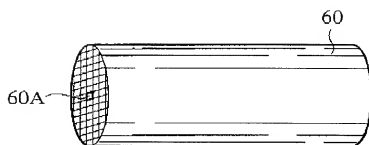


FIG.4B

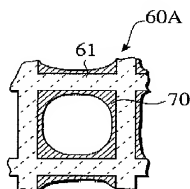
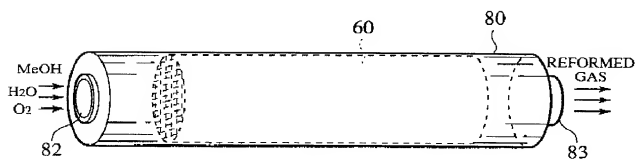
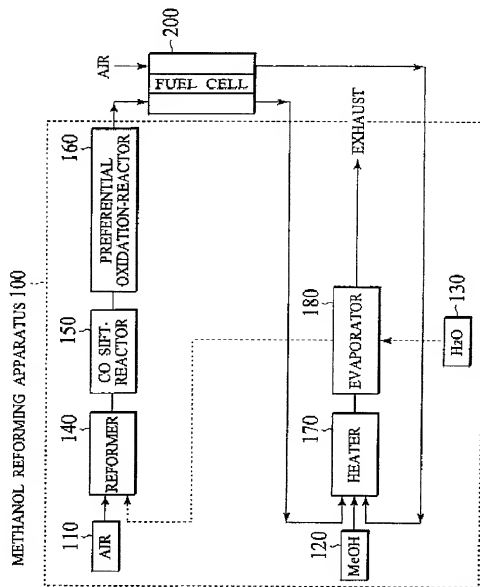


FIG.5



8/10

FIG.6



9/10

FIG.7

Table.1

Example	Composition of catalyst			Reaction time (min)	Co concentration (%)	Reformation rate (%)
	1st catalyst layer	2nd catalyst layer	3rd catalyst layer			
example 1	CuO-ZnO	Pd/ZnO		0.5 1 5	11 0.9 0.9	98 100 100
example 2	CuO-ZnO	Pd-Zn-CeO ₂ -ZrO ₂		0.5 1 5	1 0.9 0.9	98 100 100
example 3	CuO-ZnO	Pt/Al ₂ O ₃	Pd/ZnO	0.5 1 5	1.5 1.3 1.3	100 100 100
example 4	CuO-ZnO	Pt/Al ₂ O ₃	Pd-Zn-CeO ₂ -ZrO ₂	0.5 1 5	1.5 1.5 1.5	100 100 100
example 5	Pt/Al ₂ O ₃	CuO-ZnO	Pd/ZnO	0.5 1 5	1.3 1.3 1.3	100 100 100
example 6	Pt/Al ₂ O ₃	CuO-ZnO	Pd-Zn-CeO ₂ -ZrO ₂	0.5 1 5	1.3 1.3 1.3	100 100 100
example 7	Pt-Al ₂ O ₃ +CuO-ZnO ※1)	—		0.5 1 5	1.2 1.4 1.4	90 95 99
comparative example 1	Pt/Al ₂ O ₃ ※2)	CuO-ZnO ※3)		0.5 1 5	5.1 6.2 6.5	99 100 100

※1) These components of catalyst are mixed in a single layer.

※2) This component is arranged in the upper stream.

※3) This component is arranged in the lower stream.

10/10

FIG.8

Table.2

Example	Composition of catalyst		After 50hr-reaction	
	1st catalyst layer	2nd catalyst layer	Co concentration (%)	Reformation rate (%)
example 1	CuO-ZnO	PdZnO	1.2	98.5
example 2	CuO-ZnO	Pd-Zn-CeO ₂ -ZrO ₂	1.1	99.5
comparative example 2	CuO-ZnO	—	0.9	83.3